

Amendments to the Specification:

Please replace the paragraph starting at page 11, line 3, of the specification with the following amended paragraph.

The sensor current detection circuit incorporated in the sensor element control circuit 28 is connected to the microcomputer 34 via a ~~D/A converter 36~~ A/D converter 36. The microcomputer 34 can read via the ~~D/A converter 36~~ A/D converter 36 a sensor current that is detected by the sensor current detection circuit. Therefore, while an air-fuel ratio detection voltage is applied to the sensor element 14, the microcomputer 34 can detect the exhaust gas air-fuel ratio in accordance with the sensor current. While the impedance detection voltage is applied to the sensor element 14, the microcomputer 34 can detect the element impedance in accordance with the sensor current.